DOCUMENT RESUME

ED 232 652 IR 050 277

AUTHOR Carey, Kevin
TITLE A Study of Periodical Literature Searching at an Urban Research Library: Problems and Patterns.
PUB DATE Dec 82
NOTE 65p.; Master's Thesis, University of Chicago.
PUB TYPE Dissertations/Theses - Master Theses (042) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Abstracts; *Academic Libraries; *Citations (References); Higher Education; *Indexes; Information Retrieval; Library Research; *Library Skills; Library Surveys; Questionnaires; *Serials; Student Research; Use Studies
IDENTIFIERS Library Users

ABSTRACT

Patron use of periodical indexes at an urban academic research library was studied over a 7-week period in the summer of 1982. A total of 98 patrons were interviewed on a random basis as they used various periodical and newspaper indexes. The questionnaire was designed to gather information on citation elements, the methods patrons use to locate magazines in the library, and their use of the university's serials holdings list. The study's original hypothesis--that many patrons have difficulty with periodical literature searches--was not supported by the data results. Approximately 54% of the patrons were checking indexes for general information. The undergraduates were the largest number of users for general periodical indexes, while graduates used the more specialized subject indexes. People generally tended to use the indexes that were within their academic area of concentration. These and other results are presented in this report, as well as survey methodology and conclusions and problems related to the design of the study. Appendices comprise a sample questionnaire, a master list of indexes, and a map of the index area for periodicals showing the general layout of the reference area. A 50-item bibliography concludes the report. (Author/ESR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED232652

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

IR

THE UNIVERSITY OF CHICAGO

A STUDY OF PERIODICAL LITERATURE SEARCHING AT AN URBAN RESEARCH LIBRARY: PROBLEMS AND PATTERNS

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE LIBRARY SCHOOL
IN CANDIDACY FOR THE DEGREE OF
MASTER OF ARTS

BY

KEVIN CAREY

CHICAGO, ILLINOIS
DECEMBER, 1982

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Kevin J. Carey

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR 022 771

To my mate in life, who
loves me even though I
eat all the cashews out
of the mixed nuts, and
whose classic comment
through all this was
"Are you going to type
all night again?"

Thanks for your support.

TABLE OF CONTENTS

ABSTRACT iii

INTRODUCTION 1

SIGNIFICANCE OF THE TOPIC AND PRIOR WORK 3

METHODOLOGY 8

RESULTS OF THE STUDY 19

DISCUSSION AND CONCLUSIONS 36

Appendixes

A. QUESTIONNAIRE FOR INTERVIEW OF PERIODICAL INDEX USE 44

B. MASTER LIST OF INDEXES 48

C. MAP OF INDEX AREA FOR PERIODICALS AND GENERAL LAYOUT OF REFERENCE AREA FOR SITE OF STUDY 55

BIBLIOGRAPHY 56

4

ABSTRACT

During the summer term of 1982, I studied patron use of periodical indexes in an urban library over a seven-week period. This was done by interviewing patrons on a random basis as they used the various periodical and newspaper indexes. The questionnaire was designed to gather information on citation elements, how patrons locate magazines in the library, and how they use the university's Serials Holdings List. My focus throughout the study has been on the patterns and problems that patrons may have as they go through the periodical process and on the kinds of indexes that they use, ranging from general to specialized. The study is not designed as a specific description of one institution's user patterns, but to note patterns that may be found among users in general. Analysis of these patterns can improve the overall understanding of literature searching with regard to periodicals.

INTRODUCTION

I notice in my work at an urban academic research library that at least 50 percent of the patrons I helped as a reference intern had difficulty doing searches for periodical literature. It is my understanding from conversations with other librarians that this is a common problem in many institutions. Past studies of periodical use have focused primarily on subject analysis of citations to determine popular periodicals in various disciplines. I studied the patterns and characteristics of index use by patrons by contacting them at the time they were actually using the periodical indexes. I use the term "periodical" to include newspapers, popular magazines, and scholarly journals. One of my hypotheses was that many of these patrons use indexes, including the university's Serials Holdings List, without fully understanding how they work and without knowing the instructional aids that the indexes provide. Also, I believed that many patrons did not recognize the various points of access (author, title, subject) that exist to locate literature on a subject in a given periodical index. As a result, the indexes were underused as reference sources and the information they provided

could be misinterpreted. One aim of my study was to identify patrons' points of confusion when they were using the periodical indexes and the university's Serials Holdings List.

SIGNIFICANCE OF THE TOPIC AND PRIOR WORK

In the past few decades, the volume of periodical literature has increased considerably, especially in the technical and scientific fields. As an example, the branching of the Wilson tree of indexes attests to this growth. Indexes have also become more sophisticated in recent years. There is a continuing need for better and more systematic patron access. For this to happen, librarians need to know how patrons use the indexes and the problems they may have. Better understanding of patron use will help librarians to promote user education and reference work.

The university where my study was conducted has a committee that is in the process of developing a library-wide program for user education and is interested in patterns of library use by staff and students. My study can help that committee by identifying problems with periodical use and by suggesting remedies for these problems. Sources of confusion may be clarified by analysis of the department layout, directional graphics, and the organization of the various indexes themselves. The study may provide some helpful information for reference librarians planning future library instruction. The study is not intended to be a "user study" specific only to the university, but general enough to be of value in other institutional settings.

The study may be significant in regard to future use of periodical indexes available on-line and in print. These data are currently searched by librarians, but it is likely that eventually this access will become available to patrons. It may be of value to know more about how patrons interpret the information that they find in the indexes. Whether they find a citation on-line or in a book, they must still decipher it correctly to locate the article. The interpretative process remains the same.

Most of the studies that have been done concerning periodical literature deal with citation analysis from bibliographies and footnotes. The major point of such studies is to determine the original indexes that were used to obtain the citations. Focus is on the index's content, not on the search techniques involved in obtaining periodical literature. Buttain and Line conducted such a study of scientific citations in 1973.[1] Line and Sandison added their work on the use of citations from bibliographies for obtaining additional subject references in 1975.[2] F.W. Lancaster evaluated indexes and abstract journals for

---

[1]Michael J. Buttain and Maurice Line, "Sources of Citations and Reference for Analysis Purposes: A Comparative Assessment," Journal of Documentation 29 (March 1973):72-80.

[2]M.B. Line and A. Sandison, "Practical Interpretation of Citation and Library Use Studies," College and Research Libraries 36 (September 1975):343-46.

medical literature in 1971. His study dealt primarily with the content and arrangement of these sources.[1]

Several studies have dealt specifically with the Readers' Guide to Periodical Literature. Christianson[2] and Cole[3] botn analyzed the kinds of educational material that the index provided in their respective studies in 1968. Healey and Cox did a similar study in 1978 on the research effectiveness of periodicals indexed in the Readers' Guide.[4] Again, the studies dealt with the content of the index, not its interpretation by the patron.

Other researchers have studied the cognitive element of the reference search in general and its application to periodical indexes. Gagne[5] and Green[6] worked from this

---

[1] F.W. Lancaster, "The Evaluation of Published Indexes and Abstracts Journals," Bulletin of the Medical Library Association 59 (1971):475.

[2] E.B. Christianson, "Variation of Educational Material in Periodicals Indexed in the Readers' Guide," American Library Association Bulletin 62 (February 1968):172-82.

[3] Cole, Dorothy Ethlyn, "An Analysis of Adult Reference Work in Libraries." (Unpublished A.M. Thesis, University of Chicago, 1943.)

[4] J.S. Healy and C.M. Cox, "Research and the Readers' Guide: An Investigation into the Research Use of Periodicals Indexed in the Readers' Guide to Periodical Literature," Serials Librarian 3 (Winter 1978):179-90.

[5] Robert M. Gagne, "Human Problem Solving: Internal and External Events." In Problem Solving: Research, Method, and Theory, ed. Benjamin Kleinmuntz (New York: John Wiley and Sons, 1966).

[6] Bert G. Green, "Current Trends in Problem Solving." In Problem Solving: Research, Method, and Theory, ed. Benjamin Kleinmuntz (New York: John Wiley and Sons, 1966).

perspective to determine the psychological internal and external influences on a patron's reasoning processes during a reference interview. Allan Johnson developed this area of problem-solving theory and its applications for artificial intelligence in his masters thesis at the University of Chicago Graduate Library School. His method was to study the reference search by direct observation of the reference librarian:

> One can observe a reference librarian in action and abstract the nature of the reference process from his/her actions. A different approach would be to ask a reference librarian how information is attained. Combining these approaches one could observe a reference search having the librarian verbally indicate what is being done and why for each step along the search to the information. Clearly this would produce the best data on how reference searches are performed.[1]

I have used the same technique, that of personal observation, but one oriented to the patron prior to the time he seeks help from the reference staff about a periodical citation question. I have isolated problems of interpreting a citation and its components.

User studies comprise most of the remaining literature on periodical and general reference searches. One important study was done by Balay and Andrew for the Yale Library in 1975.[2] The researchers' intent was to determine

---

[1] Allan R. Johnson, "Problem Solving and the Reference Search." (Unpublished A.M. thesis, University of Chicago, 1978), p. 29.

[2] Robert Balay and Christine Andrew, "Use of the Reference Service in a Large University Library," College and Research Libraries 36 (January 1975):9-16.

kinds of users, peak periods of library reference staff. No detailed analysis of specific periodical searches was done because of the complexity of the study.

Golden and Linzini did a user study of the card catalog for locating periodicals in 1979 at the University of Illinois, Urbana-Champaign.[1] Their methodology was a random sampling akin to my own. However, their patrons were interviewed at the time they actually looked for a periodical listing in a card catalog. There was no coverage of a printed or on-line serials holdings list. In my study, I approached patrons at the time they were collecting citations from a periodical index. Part of the questionnaire I used dealt with the library's Serials Holdings List, but did not examine the card catalog.

At present I have found no studies that duplicate both the methods and observations I used in this study.

---

[1] Gary A. Golden and Susan A. Golden, and Rebecca T. Lenzini, "Patron Approaches to Serials: A User Study," College and Research Libraries 43, no. 1 (January 1982): 22-30.

METHODOLOGY

The interview was designed to record how patrons manage the periodical search process, which I identified as having five parts:

1. Knowing that periodical indexes exist, and identifying the appropriate ones for use.
2. Being able to locate a citation on the basis of available information.
3. Interpreting correctly an index citation to note the appropriate article title, author, journal title, volume, number, page reference, abstract or annotation, and being aware of the aids for doing this, located within most indexes.
4. Using the University's Serials Holdings List to verify that the periodical is in the collection and to locate it.
5. Physically locating the periodical in the collection and finding the desired article.

The first part is implicit in the research process since I approached patrons once they were settled with an index. I elicited information about the other four parts through a combination of standardized and follow-up questions

during the interview, which usually lasted ten minutes. For instance, if a patron could identify correctly a citation but did not use the Serials Holdings List, his patterns of use would appear as different from someone who always used the list before approaching the periodical locations. Part of the interview focused on asking questions about other searches that the patrons might have done, for instance, if they had ever used a newspaper index. My aim was to discover patterns of use and to see if patrons fell into the user groups I had hypothesized in my proposal. These groups were as follows: those users with no knowledge of periodical indexes and no previous experience with them or users who have forgotten how to use the indexes but who have some previous experience with them; those who have some knowledge of general periodical indexes, primarily the Readers' Guide, but who are unaware of more specialized subject indexes, such as the Business Periodicals Index or the Social Science Index; those familiar with the concept of specialized indexes and also familiar with the Readers' Guide and at least one other analogous subject-specialized index or newspaper index; those familiar with several specialized indexes, such as the Modern Language Association Bibliography or Psychological Abstracts; those familiar with the whole range of indexes (general, specialized, newspaper, and abstracting services).

The study took the form of random interviews done over a seven week period from June to August of the summer

quarter, 1982. The 104 interviews were conducted during the regular library hours of 8:00 a.m. to 10:00 p.m. weekdays. For the truncated weekend hours, I used only those interview times that randomly fell in the period that the library was open. I picked four observation times for each day. In this way, there was an equal distribution of the sampling.

I approached 104 patrons; data collected from ninety-eight were actually included in the study. One person refused to be interviewed because of a time problem and five patrons were high school students using the library for an orientation period. Of these ninety-eight patrons, fifty-three were undergraduates, forty-one were graduate students of the university and other schools, three were faculty members and one person was an alumnus. One of my concerns was that the likelihood of an increased graduate student population using the library during the summer might make the data unrepresentative of regular library use. As it happened, graduate enrollment during the summer was at an all-time high of 1,684 out of 7,743, or 22 percent of the total enrollment. The sample yielded a total of eighty-three students from the university, of which thirty-one (38 percent) were graduate students. So, the sample did have a slightly elevated graduate student representation as compared to the actual enrollment, which in itself was higher than other quarters.

The remainder of patrons, ten of them, were from local or regional universities such as the Illinois Institute of Technology, Sangamon State, Southern Illinois University, Roosevelt University, and the University of Chicago, or the nearby medical center campus.

I picked the interview times by first dividing the library hours into thirteen one-hour periods, listed 0 through 12. For each day, I randomly selected four one-hour periods. Truncated weekend hours often had fewer periods, usually two to three. I then randomly selected the interview time from each hour period. There were some occasions when two interviews were scheduled in the same hour, but never at the same time. During each sample time I positioned myself at a side table of the index area where I could see all the indexes without moving. I then watched for the first person to enter the index area, begin to look through an index, and copy any citation information. I did not approach anyone using the Serials Holdings List, only a periodical index. At that point, I presented myself to begin the interview. I occasionally mistook someone studying at an index table to be using an index when they were actually studying or reading another book. In these cases I resumed my search for the first person who began to use an index during that time period.

Overall, the patrons were very willing to be interviewed and did not mind the interruption. The one refusal

I had took place just before the closing time of the library on a Saturday, when an obviously harried student was checking information in an index. I noticed that more graduate students tended to use the library on weekends and were much more rushed when interviewed. All but one person stopped searching to answer the interview questions. One person, the alumnus, continued using the index and actually got up to leave during the interview. He did agree to finish it, though.

The interviews usually lasted ten to fifteen minutes. Those with the foreign students took longer, but I was able to obtain the information I needed by occasionally rephrasing questions and using examples. All of the interviews were done at the periodical index area located near the reference desk of the main library.

The reference staff was instructed to proceed with their usual information desk work during the interview times. If they helped a patron who was subsequently interviewed, I considered that information to be part of his general knowledge.

The index sources that could be used were listed in the University's Master List of Indexes as 115. Twenty-two were actually used in the study samples (see Table 1). No science indexes were listed since the university has a separate science library. This limited the study design, but I could not do a proper study of both libraries during

TABLE 1

USE OF PERIODICAL INDEXES BY ACADEMIC GROUPS

Index Name	Undergrads. 1	2	3	4	% of Total Users	Graduate Students
ABC Poly. Sci.	0	0	0	1	100	0
Abst./Soc. Work	0	0	0	0	0	1
Accountant's I.	0	0	1	0	100	0
Business Per. I.	0	2	0	4	43	8
Chgo. Sun Times	0	0	0	0	0	1
Chgo. Tribune	1	0	0	1	66	1
Criminal Just.A.	0	0	0	0	0	1
Diss. Abst.	0	0	0	0	0	1
Education I.	0	0	0	2	40	2
Engineering I.	0	0	0	0	0	1
Environment Info.	0	0	0	0	0	1
F&S Info./Corp.	0	0	0	0	0	3
Legal Per. I.	1	0	0	0	50	1
MLA Bibl.	0	0	0	0	0	2
New York Times	1	2	0	0	75	1
Physical [illegible]. I.	0	1	0	0	100	0
Poverty/Human R.	0	0	0	0	0	1
Psych. Abst.	0	0	0	0	0	10
PAIS Cum.	0	1	2	2	100	0
Readers' Guide*	6	8	3	12	91	2
Soc. Sci. Cit.	0	0	0	1	25	2
Soc. Sci. I.	0	0	0	1	33	2

*Plus alumnus.

TABLE 1 (Continued)

% of Total Users	Faculty	% of Total Users	Total Users
0	0	0	1
100	0	0	1
0	0	0	1
57	0	0	14
50	1	50	2
34	0	0	3
100	0	0	1
100	0	0	1
40	1	10	5
100	0	0	1
100	0	0	1
100	0	0	3
50	0	0	2
100	0	0	2
25	0	0	4
0	0	0	1
100	0	0	1
100	0	0	10
0	0	0	5
6	0	0	32
50	1	25	4
67	0	0	3
			1 alum
		Total:	98

the same time period. I would like to do a complementary study of the branch science library at a later date to compare patterns and problems of index use.

It was not difficult to ignore my role as a reference intern during the interviews, especially as I became more adept at asking the questions. I tried to keep the interview as natural as possible, letting the patron talk about his index familiarity and jotting notes which I then wrote in full on the questionnaire when the interview was over.

Patrons did occasionally ask me if I worked in the library and then asked for help in answering a question. I would identify myself as a reference staff member and offer to help them on completion of the interview. I found myself doing reference work with the patrons, explaining the library to them. These cases were always very fatiguing. Overall, I was surprised at how much time it took to complete accurately each interview. I spent an additional ten to fifteen hours a week at the index area in addition to my regular work hours.

Language was not the problem that I anticipated, either. I used the terms that the patrons used. If they referred to the Serials Holdings List as the "big red books," that is what I called them. Through the course of the interviews I developed a standard list of terms that worked. For instance, few people were comfortable with "serial," so I used "magazines" or "periodicals." I did

not talk about a "citation" but about the "information for finding an article." With the foreign students I was careful to watch their facial expressions to see if they understood me or were confused. One foreign student mentioned that he usually had a friend ask the librarians for information for him, but he communicated quite well with me during the interview. I could sense when I was not clear in my questions and could rephrase my questions so they made more sense to the patrons. I did not have any trouble with the interview questions overall, and I attribute this to the pretesting.

I did pretest the interview questionnaire with eight patrons over a two week period during spring quarter of 1982. The interview questionnaire worked fairly well, with a few modifications:

1. I found it was not necessary to explain my background or reasons for doing the study. People became impatient if I talked too much at the start of the interview; it was better to use the direct approach and ask questions after a brief introduction. I usually said, "Excuse me, I'm interested in finding out how patrons locate magazine articles in the library. May I ask you a few questions?" During the actual interviews I added, "It will only take a few minutes."

2. I could be more flexible with the questions than I anticipated, even asking them out of sequence if appropriate. Since I did not take many notes during the actual interview, it was easier to ask probing questions like "What do you do next?" at various points in the periodical search process. These prompts helped the patrons to be more specific when the information they gave was too general in their replies. I used this technique often.
3. There tended to be a dross rate of irrelevant or tangential information, usually towards the end of the interview, when the questions became more general. I had to steer the topic back to periodical indexes from such comments as "Why do the lights make so much noise in here?," "Why are so many of the articles torn out of the magazines?," and so on. These replies were to the question, "Do you have any comments, complaints, suggestions, about magazine searches?" This same question, however, allowed the patrons to make some of the most interesting remarks of the interview and provided much information which was useful to the study.

In the actual testing I tried to interview at times when I was not scheduled to work at the nearby reference desk

so my function there was not so obvious. It was not always possible to do this, however, and several interviews had to be interrupted to answer the telephone or check something for someone. The patrons were surprisingly patient when this happened.

The pretesting did help me to make the interviews smoother and more natural. The sheer repetition of the interviews gave me a chance to refine my interview manner. I found if I was polite and attentive, the patrons would go through the interview without a problem. Many of the graduate students in psychology and sociology were truly sympathetic with the study and shared information about their research using questionnaires. I made sure to thank the patrons and help them afterwards if I could add to their search strategy or research. I was pleased with the cooperation that everyone showed. It made the interviews pleasant.

RESULTS OF THE STUDY

It became clear to me as I tabulated the data that my major hypothesis--that patrons have difficulty with periodical literature searches--was unfounded, at least as originally stated. I was consistently surprised by how well the patrons understood the indexes and how adept they were at getting the information they needed. Probably my greatest surprise was the high number of correct citations identified in the interviews. I began to realize that my bias as a reference intern had led me to expect many more problems with citations than I encountered.

Part of the difficulty I had in tabulating the data was due to the interview design. I modelled the questions on a "Wilson-type" index, such as the Readers' Guide, Education Index, Business Periodicals Index, etc. The citation questions were not always relevant to indexes where nothing is abbreviated in the citations, such as Psychological Abstracts, where the information is very brief, such as the newspaper indexes, or where the citation itself was a subject heading, such as the Social Science Citation Index. These exemplify the indexes that complicated the data interpretation. I must add that the time involved in tabulating the data took much longer than I

expected. This was due to the number of short answer questions that had to be arranged on some scale. I underestimated considerably the tabulation period and found it took nearly two weeks, at four to five hours a day, to assemble the data. Part of the time factor was the tedium involved in counting questions and verifying the results.

I introduced some artificiality into the interview by asking patrons to identify a Serials Holdings List citation from a sample page instead of from the actual periodical title that they would be searching. It proved to be too time-consuming to ask patrons to interrupt their search, walk to another table where the Serials Holdings List was, find the magazine from their citation example, and identify its listing. Patrons would not go that far in their cooperation. I sensed that there were problems with the Serials Holdings List that I could not pinpoint from the interviews; these might only be discovered while observing its actual use over a period of time. I believe the problems are not so much interpreting the listings as locating the periodicals once verified as part of the collection. It was clear from the data that patrons did not know all the periodical locations in the library and that signage was a problem.

I started the questionnaire by asking patrons what part of the index they were using. Eighty-seven percent were looking at a subject heading. For 74 percent, this was the first subject heading they had looked at in the

index. These figures confirm that I was interviewing people in most cases as they started their searches. I then asked the patrons how they knew about the index by the question, "What led you to use this index?" Fifty-three percent indicated past experience with the index, followed by referral and recommendation by a professor (13 percent), reference librarian (10 percent), friend (3 percent), periodical librarian (2 percent). Only 2 percent cited a class presentation by a librarian, usually done in an English Composition class. The 2 percent figure indicates that the existing bibliographic instruction lectures are not reaching large numbers of library users and need to be publicized and given more visibility. The library staff plans to develop library orientation talks that will present the material first in a classroom setting, then at the reference area while students are actually working on an assignment. In the second meeting, a reference librarian will be on hand to work with individual students as they use the periodical indexes. The library hopes that this twofold approach will reinforce the patrons' awareness and use of indexes.

Printed instructional aids by the library, such as its Periodical Index List and the Basic Reference Books reference leaflet, each accounted for 2 percent of the patrons' familiarity with the indexes. Ten percent of the patrons discovered the indexes by browsing the index area and made remarks like "It [the index] was next to the one I

usually use" and "I just found it." Such comments support the argument for having a subject arrangement of the indexes to increase their use. Since the study was conducted the library has rearranged the periodical indexes into more concentrated subject-related areas or by types of indexes, newspaper indexes being an example.

Seventy-one percent of the patrons said they had used the index before, a figure that is 18 percent higher than the 53 percent who cited past experience in the earlier question regarding how patrons knew about a specific index. The data suggest that there may have been some unwillingness on the patrons' part to admit first time use of an index. Observation of individual patrons during the interviews did not reveal any cases where the patrons were not telling the truth.

Over half (54 percent) of the patrons were checking for general information in the index. The largest share of patrons (38 percent) had used the index several times in the past six months, followed by 27 percent for several times in the past month. People often compartmentalized time into academic quarters in the replies, mentioning, for example, that they had used the index for a paper last term or at the beginning of this term.

The undergraduates comprised the largest number of users for the popular general periodical indexes, such as the Readers' Guide (90 percent) and the Public Affairs

Information Service (100 percent). The graduate students used the more specialized subject indexes, such as the Social Work Abstracts (66 percent), Psychological Abstracts (100 percent), and the Social Science Index (67 percent), just to name a few. These figures do not represent the total number or average number of indexes used by the patrons, but the indexes that they happened to be using at the time the interviews took place. Judging from the high response of people who had used their cited indexes before, the index sampling was indicative of the typical user patterns. The original hypothesis of different user groups, that of patrons with no previous index experience to those with very sophisticated experience, seems more linked to a breakdown by academic majors than by academic level. There was very heavy use of such indexes as the Business Periodicals Index by business administration students, Psychological Abstracts by psychology graduate students and Education Index by education majors. People tended to use the indexes that were within their academic area of concentration (see Table 2).

I originally estimated that 40 percent of the patrons would have trouble interpreting correctly their citations. Twenty-six percent of the undergraduates and 12 percent of the graduate students did not identify their periodical citations correctly, a figure that shows how much my early hypotheses were overshadowed by my bias as a reference librarian. I overestimated to a considerable degree the

TABLE 2

MAJORS

Undergraduate Students		Graduate Students	
Accounting	11	Accounting	1
Architecture	1	Administration	1
Biology	3	Business Administration	11
Business	3	Corrections	1
Chemistry	2	Education	1
Communications	2	Engineering	3
Computer Science	2	English	2
Criminal Justice	1	Geology	1
Economics	2	History	1
Education	2	Mathematics	1
Engineering	10	Medical Center	3
English	2	Photography	1
History	2	Physical Education	2
Nursing	1	Political Science	1
Occupational Therapy	2	Psychology	6
Pharmacy	2	Public Policy	1
Physical Therapy	1	Social Work	4
Political Science	2		
Psychology	1		

problems that patrons would have with their citation analysis. As a means of counting the citations data, I defined "citation" to be the most complete information about an article given in an index. I considered a citation to be incorrectly identified if the patrons could not identify a major element, such as the periodical name, volume, or date. I considered other citation elements, such words as "illustrated," "tables," "charts," or "portraits," to be non-essential information. Of the twenty people with incorrectly identified citations, twelve were using the Readers' Guide, six were using other Wilson indexes (Business Periodicals Index, Education Index, Legal Periodicals Index), one was using the Public Affairs Information Service, and one was using the New York Times Index. Seven of the twenty (35 percent) also did not use the Serials Holdings List; five of the twenty (25 percent) could not tell where the periodicals were located. These patrons had difficulty in all parts of the periodical search. It is noteworthy that so many of the patrons had problems with the Wilson indexes, where standardized subject headings, citations and abbreviations existed. There was an inverse relationship between the number of missed citations and the sophistication of the index. Patrons who knew about such indexes as Engineering Index and Criminal Justice Abstracts, also knew how to interpret correctly the citations. Also, the more subject-specialized indexes, such

as Psychological Abstracts and Sociological Abstracts, listed complete words and contained no confusing abbreviations. The authors of such texts may have anticipated the resulting confusion if they had abbreviated highly technical periodical names and responded by listing citations in full. If anything, the latter indexes gave the patrons far more information than they would find about an author or article in a general index to popular periodicals.

Forty-five percent of the patrons wrote down the full citation for their searches. One woman pointed out that she did not follow this practice until she once spent an hour trying to find a citation a second time for a bibliography. The citation elements that patrons most commonly wrote were the periodical title (50 percent), date (48 percent), volume (38 percent), and page (40 percent). Only 12 percent wrote the article title in full or abbreviated form. Those who omitted the periodical title explained that they remembered the name and did not need to copy down that information, or noted it in a personal form of abbreviation. When I asked patrons why they only wrote certain elements, they explained that these were all they needed for their work. Patrons described how they would go directly to the periodical location and use the periodical table of contents as an index for related articles on their subjects. Others would skim the index for a particular periodical, then browse through it after checking a specific article. This was the case when patrons knew a certain

periodical that was likely to have articles on the subject they were researching and also knew the periodical was well-respected in that field. Users of subject-specialized indexes practiced this pattern more than users of general or popular indexes. Some patrons copied a full citation and abstract, for example, from Psychological Abstracts, if they did not plan to read the article, and copied a combination of elements if they did plan to read it. People did not need or use all the citation elements to locate the articles, but this depended on the individual habits of the patrons. One man had memorized the Readers' Guide abbreviations' list as a high school student and continued to memorize every Wilson index abbreviation's list; he could remember abbreviated periodical names without having to check them or write them in full. Several people were interviewed while they did research for a friend or a job, so they wrote full citations when they would normally write fewer citation elements for their own use.

Several patrons used the indexes to find articles by a specific author who had been recommended as an authority in the subject area they were researching. This was often how patrons used the Social Science Citation Index when they wanted to see all the articles that a person had written in a given time period.

It became clear from their remarks that patrons using general indexes, such as the Readers' Guide and the

Public Affairs Information Service, would identify five or six articles, read them, then return to the index for more articles until they had enough information for their research. Three specialized subject index users mentioned looking for a few key articles on their subjects, using an established-author approach. They then would use the key articles' bibliographies as additional citation sources, and only consulted the periodical index as a starting point before browsing a particular periodical.

Only 11 percent of the patrons would consult an index's periodical abbreviations' list if they did not know a full name for a periodical. Sixteen percent would guess at the full title; 36 percent felt they would recognize the name from past experience. The remaining 37 percent did not respond to the question.

The low number of people who did not generally verify a periodical title would certainly affect efficient Serials Holdings List use. My original estimation was that 75 percent of the patrons did not check the index's abbreviations' list. The data show the figure to be 89 percent, or a 14 percent increase over the expected result.

Patrons had some misconceptions about the Serials Holdings List that resulted in some confusion. Five people believed that the list gave abbreviations for periodical titles. It does not. Thirty-two percent of both the undergraduate and graduate students were not familiar with the

Serials Holdings List and used other means to locate their periodicals. There was an ascending pattern of use among the undergraduate students, from 11 percent by first-year students, to 75 percent by fourth-year students. Those who did not check the Serials Holdings List usually went directly to the probable location for the periodical (33 percent), or asked the reference librarian (13 percent). About half of those who said they used the Serials Holdings List said they would do so only if they were unfamiliar with a periodical title or could not locate it first by themselves. A typical user remark from this group was "I go to the reference librarian only if I'm not familiar with a magazine and really need an article. The same is true with the periodical list [Serials Holdings List]. Otherwise, I'll guess and then look for it."

Of those who did use the Serials Holdings List (49 patrons), nine (18 percent) did not identify correctly the sample citation. They usually misread a volume number or misunderstood closed subscription dates to be open. For undergraduates, the incorrect citations were 14 percent of the total; for graduate students, 25 percent. It appears that the Serials Holdings List was underused and used incorrectly by one-third of the patrons interviewed. Of course, people may just verify the library's holdings on the list and ignore the other information. Several people remarked that they checked a periodical's appearance and

its location in the Serials Holdings List, but did not look at subscription dates. When asked how they would find out about information for using the Serials Holdings List, 47 percent of the patrons said they would ask the reference librarian; 5 percent knew from past experience; and 4 percent looked at the Serials Holdings List preface and abbreviations list. The proximity of this list to the reference desk is a major reason for this pattern of constantly asking a reference librarian for help. There is always a reference librarian available to explain the Serials Holdings List, so patrons do not need to decipher its citation elements.

Periodical locations are scattered throughout the library, with the primary areas being on the second and fourth floors. I phrased the periodical location question thus: "From your experience, where are the magazines located in the library?" so I could check on how specialized the indexes were that a patron used. Popular and some scientific periodicals are located in the main library, second floor south; scientific and technical periodicals are in the main library, fourth floor north. There are periodicals with call numbers in the stacks, in a separate government documents collection, and in the science and mathematics branch libraries. Sixty percent of the patrons identified main second south as the one periodical location. I asked this group if there was any other place for periodicals that they knew of; they did not. Fourteen percent knew there were the two main locations; 3 percent knew

three locations; and only 1 percent knew of more than three locations. The comments here were generally complaints about inadequate directional signs for periodicals and the desire to see all the periodicals grouped in one location. No one mentioned the idea of classifying the serials and integrating them in the collection. The large number of patrons who knew only one location indicates that more and clearer signs would help patron awareness of the library's periodical collection.

I wanted to see if people found it easier to use a single source index, such as a newspaper index, rather than a periodical index. My hypothesis was that people would find a newspaper index easier since the search process did not require the intermediary step of the Serials Holdings List or searching for various titles. I also wanted to see how many patrons actually read the articles they found in the newspaper indexes. From my experience I believed that approximately 75 percent of the people using a newspaper index did not go on to read the articles, but used the index as an information source, for events, news reports, etc. Of the forty-five patrons who used the newspaper indexes, thirty-five (78 percent) went on to read the articles and only ten (22 percent) used the indexes in the way I had anticipated. I checked for accuracy by asking the patrons if they read the articles on microfilm or paper copy. The library keeps only microfilms of its newspapers after a four-week period. Everyone verified that they used the

microfilm copy. Forty-seven percent found periodical indexes easier to use; 15 percent found newspaper indexes easier; 20 percent found no difference in the two; 17 percent did not know or had no comment. The reasons given for the periodical preference were primarily the clarity and type style of the indexes and the more selective subject arrangement. One patron explained that she used newspaper indexes for fact-gathering to begin her research, but preferred the periodical indexes where she could get more interpretation and opinions on a subject. Another complained that the bulk of the article citations in the newspaper indexes made them too time-consuming to scan. He preferred the more limited selection under the periodical index subject headings. One man used the Wall Street Journal Index as an index to his own subscription of the newspaper but disliked the time lag in the index's currency. Patrons consistently mentioned their dislike of handling microfiche. However, one person cited an advantage of microfiche in that it was not as likely to be missing or defaced as the bound periodicals that he used. He still did not like using the fiche, but felt it was more accessible and could count on its permanence in the library's collection.

Forty-eight percent of the patrons went back through one to five years' worth of indexes in the specific searches at the time of the interview. The numbers then dropped to 18 percent for six to ten years, 14 percent for eleven to twenty years, and 4 percent for over twenty. Eighty percent

of the patrons asked said they used the unbound copies of the periodical indexes. Two patrons mentioned that they would use the unbound copies only for very current subjects; otherwise it was not worth the effort.

Half of the patrons did not know if I worked in the library at the time I interviewed them. The 34 percent who did know had either seen me give a bibliographic instruction lecture in one of their classes or had seen me at the reference desk. My professional visibility did not seem to affect the patrons' replies. I did not find the nervousness or discomfort among the patrons that was visible in the pretesting.

The interviews did have their humorous moments. Two patrons mentioned that they would go to the "receptionist," with a broad gesture in the direction of the reference librarian, when seeking help. One woman, when asked if she knew at the beginning of the interview whether I worked in the library, said, "No, actually, I thought you were trying to pick me up." I wasn't, but she was very attractive.

The general-comments questions brought a variety of replies. There was a high degree of complacency with the library as it existed, especially from visiting students who were used to periodicals spread out among different campuses, such as Loyola University. Complaints were about the insufficient signs and directions, and about the large amount of missing or mutilated periodicals in the collection. Approximately ten patrons noted that 3 percent to 25 percent of

their citations were unavailable because of theft or mutilation. Other comments concerned the needs for more library tours for foreign students; more duplicates of periodical indexes, especially on other floors of the library; more dependable photocopying machines; a change machine; more explanations of how to find periodicals on the library computer system; more library-produced pamphlets and brochures explaining the interlibrary loan process; better library security; periodical priority at the bindery so the business periodicals would be bound first; faster shelving of bound periodicals; a listing of periodical title abbreviations in the Serials Holdings List; more copies of the Serials Holdings List distributed in the periodicals index area; the need for a periodicals reading room; the difficulty of finding unbound periodicals; the need for clearer additions listings to the Serials Holdings List, not pencilled in by hand. About four to five patrons mentioned at least one of these comments.

Two people came up with the same idea of having the library staff compare an index's list of periodicals to the Serials Holdings List and indicating the library's holdings as applied to the index. This list could then be taped to the appropriate periodical index table and patrons could then check whether the library has a specific periodical before bothering to write down a citation from it. This is not a problem with general indexes. But for specialized ones, such as the Physical Education Abstracts or the Applied

Science and Technology Index, where the library is not likely to have all of the periodicals indexed, it can save the patron considerable time. I mentioned this idea to one of the library bibliographers who replied that he routinely checks indexes against the Serials Holdings List to determine any gaps in the collection. He agreed that it was a valuable idea that could be very helpful to the patrons.

DISCUSSION AND CONCLUSIONS

Probably the single most important problem of the study design was my original overstatement of anticipated patron problems and my professional bias as a reference intern. I was convinced before I conducted the study that there would be serious user problems regarding periodical indexes, the Serials Holdings List, and about physically locating the periodicals. The study proved me wrong; specific user problems were much lower than anticipated and the patrons I interviewed were generally very knowledgeable about the periodical index process as outlined earlier. My professional bias made me very attentive in the interviews to any mention of user problems since I expected to support my original hypotheses. In overall terms, the number of people who could not identify correctly a citation--twenty out of ninety-eight or 20 percent--was half of the number I originally estimated. It was only when I had tabulated the data and began to look over the figures that I realized how much higher I had expected the failure rate to be.

One of the most apparent user problems I noticed was the way people had difficulty with all aspects of the periodical index process if they had any problems. Patrons

who could not read a citation also did not understand how to use the Serials Holdings List and tried to locate periodicals in a haphazard way. Their low success rate was consistent throughout the process.

Conversely, those patrons who knew how to use the indexes and identified correctly the citations had a strong understanding of the entire periodical search process, often in an innovative and creative way. These users are generally upper-division undergraduate and graduate students who knew how to scan article bibliographies for further information, how to spot key articles that would save them reading large number of articles on the same topic, and browsed through the periodicals to find related information on their subject. They used the indexes as starting points, but did not rely exclusively on them for their information.

There is a learning process implicit in a university library that assumes that students will become better library users as they progress from the lower to the upper levels of undergraduate work and on to a graduate level. Some students leave or flunk out; those who remain or enter as transfer students have some prior familiarity with library use and the searching involved for periodicals. This process is supported by the results of the study, where there was a gradual increase in successful periodical searching and more awareness of how to find materials. In addition, there was a strong increase in the specialized indexes that the

students used as they advanced academically. This carried over to other information that the students had about periodicals in general. For example, the patrons who knew that periodical articles could be photocopied and sent from regional affiliate libraries through interlibrary loan for their use were all upper-level or graduate students. (They commented on this process during their interviews.) It is possible that such students have to be more resourceful because of the more specialized nature of their research citations. General and popular periodicals are available in almost any college library; specialized subject journals are not. The upper-level and graduate students were also more aware of how to locate periodicals on the university's on-line catalog, which displayed holdings of both local and regional schools as well.

There were other considerations affecting successful periodical use that I became aware of after I had conducted the interview and read through the mistakes that the patrons had made. The typeface of certain printed indexes was often confusing to patrons. Although they did not complain specifically about a citation's legibility, it was clear that this was a problem when I studied the mistake patterns. Indexes that were printed with the same weight lettering for the entire citation were more likely to confuse a patron than those printed with a combination of boldface, italics and lightweight print. The Wilson indexes had the highest rate of citation mistakes. I credit it to the layout of the

citation elements where such abbreviations as "il," "tab," and "por" appeared in front of a periodical title. The only way to recognize the journal title in some cases was to know that its words were capitalized; descriptive abbreviations were not. At least one patron out of ten would read an abbreviation as part of the periodical journal title.

In the same way, newspaper indexes that showed all the citation information on one or two lines with no variation of print and little spacing between words, caused problems. Patrons complained about the small print, especially in computer-printed sources such as the Social Science Citation Index. The more specialized subject indexes, such as Psychological Abstracts and Sociological Abstracts, contained full names, no abbreviations, used different typefaces for different citation elements, and were much easier for the patrons to read. The citation identification rate was much higher with these kind of indexes.

I recognize in retrospect that the interview questionnaire design had several gaps that would have provided information on the educational process of the patrons. I did not ask the patrons what other indexes they usually used or if they used more specialized indexes as they went through their coursework and decided on a major. Incorporating these two questions would have made the study of sophisticated user patterns more cogent.

Also, I must comment on the actual layout of the interview questionnaire. I had no idea how much time it

would take to tabulate the data. When I was pretesting this was not a problem because of the small number involved. But when I was tabulating the actual interviews, over a hundred of them, I was unprepared for the extra time it took to get the data in readable form. I know if I had spent more time on the design before the interviews that I would have saved myself considerable time and inconvenience afterwards.

The study did illustrate the existence of the user groups that were outlined originally in my proposal, but in a general, not a specific, way. There was the whole range of users from those patrons with little or no past experience of periodical index use to those with high use patterns of different indexes. But the middle groups were much more vaguely drawn, with users most often falling into the group with familiarity with the concept of specialized indexes, a general index such as the Readers' Guide, and at least one other analogous subject-specialized index. People tended to replace one index with another in their common use pattern, moving from popular indexes to a subject index for their major field of study. They did not tend to use a large number of other indexes besides the one pertaining to their major. This was often exemplified by the graduate students, 90 percent of whom were interviewed using a subject index related directly to their major. Psychology students used Psychological Abstracts, business students used the Business

Periodicals Index, education majors used the Education Index. Because I did not ask patrons how many other indexes they normally used, I cannot claim this observation to be substantiated. It was my impression that this was the case.

Overall, I was surprised by how effectively the periodical process worked for the patrons I interviewed. Of course, I studied people who were already at the point of using an index and who had previous experience with it in most cases. My study design did not give me access to the patrons who have never used an index and who may not know that these sources exist for their benefit. These people are the ones who need to be sought out for periodical indexes to be used effectively in great volume.

The library does intend to incorporate some of the suggestions that the patrons made in the study. There is a plan to open a serials reading room in the next year; a suitable location is under consideration. Periodicals are being sent through the bindery at a faster rate than in the past to keep the collection more accessible. More classification of the serials is being considered so that patrons can use the on-line computer system in place of the Serials Holdings List for both books and periodicals. Some thought has been given to scattering the periodical locations in the book collection by call number so there are no unknown bound periodical locations. One month after this study was conducted, the reference staff rearranged all the periodical indexes in a logical subject-related order to encourage

browsing and increase use. The reorganization seems to be working; the staff notices more patrons using previously little-used periodical indexes. The observation has no scientific base, but is a general impression of the librarians from their daily contact with the area.

The importance of successful periodical index use is not mentioned much in library literature, yet is a concern for many librarians in public service work who see the problems and frustrations that happen frequently with periodical searching. Unsuccessful and problematical index use is wearing for both the librarian and the patron. The patron becomes discouraged and discontinues the search if he does not understand a citation; and the librarian must answer the same directional questions, explain the same citation elements, interpret the same information regarding the Serials Holdings List. No effective user education recommendations can be made until librarians can pinpoint specific problems and verify their observations in a systematic way as was done in this study. Any attempt to improve patron service has to start with a systematic analysis of user patterns and problems. This report of my study demonstrates one means of gathering the data necessary for such an analysis. It also, of course, offers specific information about user needs which may be useful to academic librarians in a variety of settings.

APPENDIX A

QUESTIONNAIRE FOR INTERVIEW ON PERIODICAL INDEX USE

Excuse me. I'm doing a study on how people get information about magazines here in the library. May I ask you a few questions about the index that you are looking at right now? (Check to make sure that the book is actually an index.)

Mark appropriate index:

___Readers' Guide	___Biography In.	___Amer:Hist&Life
___Education Index	___NYT Biog.	___Art Index
___CIJE(Eric)	___NYT Index	___Music Ind.
___Psych. Abstracts	___Chi. Sun Times	___Avery/Arch.
___Social Science	___Chi. Tribune	___Peabody Mus.
___Humanities	___Wom.St. Abs.	___Crim.Jus.Abst.
___Business Per.	___PAIS Cum.	___Diss. Abst.
___MLA Biblio.	___PAIS Bltn.	___Energy Abst.
___International	___Bk.Rev. Dig.	___Legal Per.
___SS Citation I.	___Bk.Rev. Ind.	___Econ.Art.Ind.
___Abs. Soc.Work.	___Bk.Rev.SSPer.	___Libr. Lit.
___Soc. Work.Res.	___NYT Bk.Rev.	___LISA
___Soc. Abst.	___Predicasts	___LA Times In.
___Phil.Ind.	___WSJ Index	___London Times In.
___Phy.Ed./sports	___Acct's Ind.	___Pop.Per.Inc.

Other:_____

I want to assure you that any information that I use will be strictly confidential. I will have no way of identifying you in my study or of singling out your answers as an individual. I have noticed that people have a variety of ways to get at journals, and understanding this better would be very valuable.

Are you a student here at the University? ___Yes ___No

Male Female Foreign?

Student Level: 1 2 3 4 Grad. Alum. Post Doct. Faculty Mem.

Lib. Staff Other School Other_____

Age_____ Major_____

What part of the index are you looking at right now?

(___subject heading ___preface ___article citation ___Other)

What led you to this index? _____

At what point were you in using the index? _____

Have you used this index before? ___Yes ___No

___times today? ___times this week? ___times this month?

___past 6 months?

What information do you want to get from the index? _____

Article Citation Checking for Bibl. Other:

Are you looking at a particular magazine entry right now? I'd like to know from you what this group of words means (pointing to the article citation the patron is using. If patron is not looking at a citation, record that):

(Check for correct identification ___Name of Article ___Author)

Could you tell me what this group of words means if you were using this entry?

(Find citation that has items to be identified. Can patron find them if he needed to find them?)

What is the name of the magazine? (Correctly cited: __Yes __No)

How did you know that?

(Previous knowledge Guessed Cked in Abbr.List if appl.)

How about the other words and abbreviations?

Vol. Num. Page Date - Month Year Bibl. Tabl. Charts

Don't know Can get if needed?

What do you usually write down when you are looking for a magazine article?

full cit. combination: author title(article) title(maga.)

volume number date - year, month page.

When you have determined the magazine articles that you want to find, what do you do?

Ck Ser.Hold.List Go to per. loc. Ask libn. dir. Other:

If patron indicates that he uses the SHL, go to nearby copy and ask patron to find the magazine title. If patron does something else, record that information:

How do you look up a magazine in the SHL? Journal title

Article title Author Other

Pick out magazine title in SHL. What do the words after a magazine and in the right margin mean?

Correctly identify: sub. dates vol. num. microf. location

Correctly identify: parts of location notation: lib. floor north/south

How could you find out what these symbols mean if you didn't know?

Abbr. List Past Use Ref. Libn. Don't Know Other:

Where are the magazines located in this library:

Main 2 S M2S/M4N M2S/M4N/Docu. M2S/M4N/Docu./Sci.

Rest/Call #

Are there any comments that you want to make about looking for magazines in this library?

Do you find it easier to use an index that has one magazine listed in it (NYTimes, WSJ, Chicago Tribune Indexes) or one that lists many many mags?

With a newspaper index, do you usually read the article that you find in the index? ___Yes ___No

On microfilm or paper Copy?

Any comments, complaints, suggestions about magazine searches?

How far back (how many years) do you usually look in the index volumes?

Do I work here as an employee?

Thank you. You've been very helpful.

APPENDIX B

MASTER LIST OF INDEXES

Table Location	Title
12	ABC Pol. Sci.
5	Abstracts for Social Workers
10	Abstracts of English Studies
12	Abstracts of Popular Culture
8	Abstracts on Criminology and Penology (Current issues kept at Information Desk)
8	Abstracts on Police Science (Current issues kept at Information Desk)
12	Accountant's Index
12	Accounting Articles
1	ALA Index; index to general Literature
9	America: History & Life
10	Annual Bibliography of English Language and Literature
12	Applied Science and Technology Index
11	Art Index
11	Arts & Humanities Citation Index
11	Avery Index to Architectural Periodicals. Second edition and Supplements
11	Avery Obituary Index of Architects and Artists
9	Bibliography of Library Economy
4	Biography Index
2	Book Review Digest
2	Book Review Index
2	Book Review Index to Social Science Periodicals
7	British Humanities Index
6	Business Periodicals Index

Table Location	Title
10	Catalogue of the Peabody Museum Library
5	Chicago Sun-Times Index
5	Chicago Tribune Index
8	Child Development Abstracts and Bibliography (Current issues kept at Information Desk)
1	CIJE (Current Index To Journals in Education)
GEN. REF.	Combined Retrospective Index to Journals in History (CRIS)
12	Completed Research in Health, Physical Education and Recreation
13	Comprehensive Dissertation Index
9	Consumers Index
8	Crime and Delinquency Literature
8	Criminal Justice Abstracts (Current issues kept at Information Desk)
8	Criminal Justice Periodicals Index (Current issues kept at Information Desk)
3	Cumulative Subject Index to the P.A.I.S. Annual Bulletins
2	Current Book Review Citations
1	Current Index to Journals in Education (C.I.J.E.)
12	Current Literature in Traffic & Transportation
13	Dissertation Abstracts
13	Dissertation Abstracts International
1	Education Index
7	Energy Index
11	Engineering Index (Earlier volumes in stacks)

Table Location	Title
10	Environment Abstracts
10	Environment Index
10	Environment Information Access
7	Essay and General Literature Index
10	Exceptional Child Education Abstracts
10	Exceptional Child Education Resources
8	Excerpta Criminologica
8	Funk & Scott Index of Corporations & Industries
7	Historical Abstracts Part A: Modern History Abstracts Part B: 20th Century Abstracts
12	Human Resources Abstracts
6	Humanities Index
12	Index of Economic Articles
12	Index of Economic Journals
11	Index to Art Periodicals
2	Index to Book Reviews in the Humanities
8	Index to Legal Periodicals
4	Index to Periodical Articles by and about Blacks
4	Index to Periodical Articles by and about Negroes
12	Index to Religious Periodical Literature
6	International Index
8	International Political Science Abstracts
7	Land Use Planning Abstracts
9	Language & Language Behavior Abstracts (L.L.B.A.)
9	Library & Information Science Abstracts

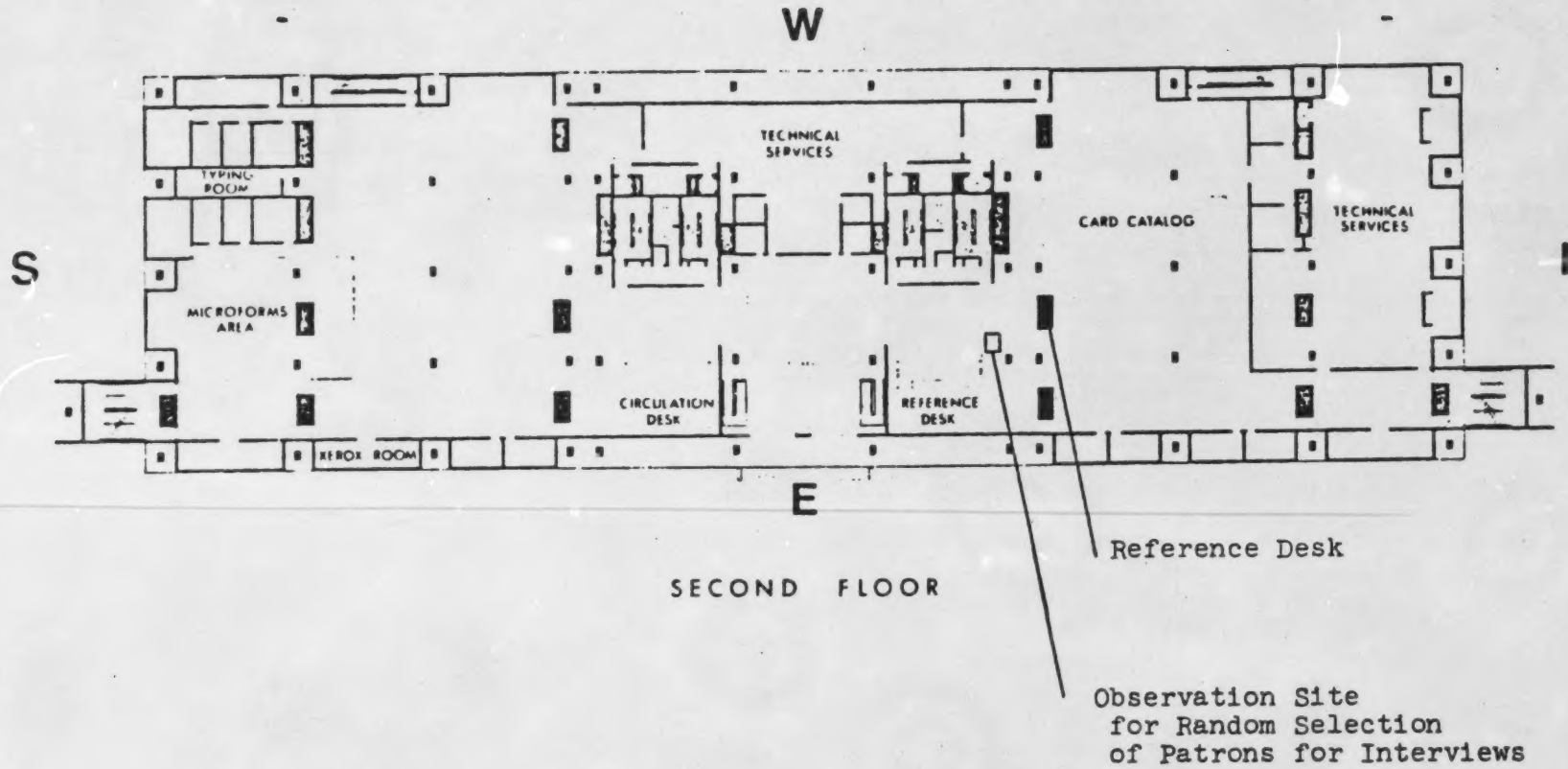
Table Location	Title
9	Library Literature
7	Los Angeles Times Index
6	M.L.A. Abstracts
6	M.L.A. Bibliography
8	Media Review Digest
10	Modern Humanities Research Assn. Annual Bibliography of English Language and Literature
9	Music Index
9	Music Index Subject Headings List
4	New York Times Biographical Edition
2	New York Times Book Review Index
4	New York Times Index (Ask at the Information Desk for 1851-1944)
4	Newspaper Index: Los Angeles Times, Washington Post
1	Nineteenth-Century Readers' Guide to Periodical Literature
7	Official Index to the Times (London) (Ask at Information Desk for 1941-1964)
4	Official Washington Post Index
9	Oxford English Dictionary
	Palmer's Index to the Times Newspaper (Ask at Information Desk)
10	Peabody Museum Catalogue
7	Philosopher's Index
12	Physical Education/Sports Index
6	Police Science Abstracts
9	Pollution Abstracts

Table Location	Title
1	Poole's Index to Periodical Literature
9	Popular Music Periodicals Index
7	Popular Periodical Index
12	Poverty and Human Resources Abstracts
7	Predicasts
1	Psychological Abstracts
1	Psychological Abstracts Author Index and Supplements
1	Psychological Abstracts. Cumulated Subject Index 1927-1960 and Supplements
3	Public Affairs Information Service (P.A.I.S.) Bulletin
12	Public Affairs Information Service. Foreign Language Index
1 and 3	Readers' Guide to Periodical Literature
12	Religion Index One: Periodicals
8	Sage Urban Studies Abstracts
6	Social Sciences & Humanities Index
5	Social Science Citation Index
6	Social Sciences Index
5	Social Work Research and Abstracts (Current issues kept at Information Desk)
5	Sociological Abstracts
1	Thesaurus of ERIC Descriptors
7	The Times (London) Index
8	United States Political Science Documents
8	Urban Affairs Abstracts

Table Location	Title
7	Wall Street Journal Index
4	Washington Post Index
4	Women Studies Abstracts

APPENDIX C

MAP OF INDEX AREA FOR PERIODICALS AND GENERAL LAYOUT OF REFERENCE AREA FOR SITE OF STUDY



SECOND FLOOR

Map of Index Area for Periodicals and General Layout of Reference Area for Site of Study.

55

BIBLIOGRAPHY

Balay, Robert and Andrew, Christine. "Use of the Reference Service in a Large University Library," College and Research Libraries 36 (January 1975):9-16.

Benson, J. and Maloney, R.K. "Principles of Searching," RQ 14 (1975):316-20.

Bookstein, A. "How to Sample Badly," Library Quarterly 44 (April 1974):124-32.

_____. "Implications for Library Education." In Operations Research: Implications for Library Education. Chicago: University of Chicago Press, 1972.

Bradburn, N.M., et al. Improving Interviewing Method and Questionnaire Design. Chicago: University of Chicago Press, 1979.

Brown, Clara D. Serials Acquisition and Maintenance. Birmingham, Ala.: Ebsco Industries, 1972.

Bunge, Charles A. "Charting the Reference Query," RQ 8 (1969):245-50.

Butler, Pierce. The Reference Function of the Library. Chicago: University of Chicago Press, 1956.

Buttain, J. Michael, and Line, Maurice. "Sources of Citations and Reference for Analysis Purposes: A Comparative Assessment," Journal of Documentation 29 (March 1973):72-80.

Childers, T.A. "Managing the Quality of Reference Information Service," Library Quarterly 43 (March 1973): 72-80.

Christianson, E.B. "Variation of Educational Material in Periodicals Indexed in the Readers' Guide," American Library Association Bulletin 62 (February 1968):172-82.

Colburn, E.B. "Re-study of the Readers' Guide to Periodical Literature," Library Journal 93 (February 1968):527-28.

Cole, Dorothy Ethlyn. "An Analysis of Adult Reference Work in Libraries." Unpublished A.M. Thesis, University of Chicago, 1943.

Davis, R.A. and Bailey, C.A. Bibliography of Use Studies. Philadelphia: Drexel Institute of Technology, 1964.

Donohue, J.C. "Research in Information Seeking: Its Place in the Teaching of Librarians," International Library Review 4 (1972):97-101.

Dougherty, R.M. and Blomquist, L.L. "Improving access to library resources: The influence of organization of library collections, and of user attitudes toward innovative services." Metuchen, N.J.: Scarecrow Press, 1974.

Ennis, Philip H. "The Study of the Use and Users of Recorded Knowledge," Library Quarterly 34 (October 1964):305-14.

Focke, Helen. "Library Users of Information and Their Needs." In The Present Status and Future Prospects of Reference/Information Service. Chicago: American Library Association, 1967.

Gagne, Robert M. "Human Problem Solving: Internal and External Events." In Problem Solving: Research, Method, and Theory. Edited by Benjamin Kleinmuntz. New York: John Wiley and Sons, 1966.

Gardiner, G.L. "Empirical Study of Reference," College and Research Libraries 30 (March 1969):130-55.

Golden, Gary A., Golden, Susan A., and Lenzini, Rebecca T. "Patron Approaches to Serials: A User Study," College and Research Libraries 43, no. 1 (January 1982):22-30.

Gothberg, Helen M. "Communication Patterns in Library Reference and Information Service," RQ 13 (Fall 1973): 7-13.

Gould, A. "User Preferences in Published Indexes," Journal of the American Society for Information Science 25 (January 1974):279-86.

Green, Bert G. "Current Trends in Problem Solving." In Problem Solving: Research, Method, and Theory. Edited by Benjamin Kleinmuntz. New York: John Wiley and Sons, 1966.

Hall, John. "Publicity and Promotion for Information Services in University Libraries," ASLIB Proceedings 26 (October 1974):391-95.

Hanson, C.W. "Research on Users Needs: Where Is It Getting Us?" ASLIB Proceedings 16 (February 1964): 64-78.

Healey, J.S. and Cox, C.M. "Research and the Readers' Guide: An Investigation into the Research Use of Periodicals Indexed in the Readers' Guide to Periodical Literature," Serials Librarian 3 (Winter 1978):179-90.

Holler, F.L. "Toward a Reference Theory," RQ 14 (1975): 301-9.

Jahoda, Gerald and Olsen, Paul E. "Analyzing the Reference Process," RQ 12 (1972):148-56.

Johnson, Allan R. "Problem Solving and the Reference Search." Unpublished A.M. Thesis, University of Chicago, 1978.

Kahn, Robert L. and Cannell, Charles F. The Dynamics of Interviewing. New York: John Wiley and Sons, 1957.

Lancaster, F.W. "The Evaluation of Published Indexes and Abstracts Journals," Bulletin of the Medical Library Association 59 (1971):475.

Line, M.B. and Sandison, A. "Practical Interpretation of Citation and Library Use Studies," College and Research Libraries 36 (September 1975):343-46.

Lubans, John, Jr. "Non-Use of an Academic Library," College and Research Libraries 32 (September 1971):362-67.

Mayes, Paul. Periodicals Administration in Libraries. Hamden, CT.: Linnet Books, 1978.

McClure, Charles R. "A Reference Theory of Specific Information Retrieval," RQ 13 (1974):207-12.

Murfin, Marjorie E. "The Myth of Accessibility: Frustration and Failure in Regrieving Periodicals," Journal of Academic Librarianship 6 (March 1980):118.

Neill, A.G. "Problem Solving and the Reference Process," RQ 14 (1975):310-15.

Newell, Allan and Simon, Herbert A. Human Problem Solving. Enclewood Cliffs, N.J.: Prentice-Hall, Inc., 1972.

Payne, Stanley L. The Art of Asking Questions. Princeton, N.J.: Princeton University Press, 1973.

Peterson, Stephen L. "Patterns of Use of Periodical Literature," College and Research Libraries 30 (September 1969):422-30.

Pinzelik, Barbara P. "The Serials Maze: Providing Public Service for a Large Serials Collection," Journal of Academic Librarianship 8 (May 1982):89-94.

Rosenberg, Morris. The Logic of Survey Analysis. New York: Basic Books, Inc., 1968.

Rothstein, S. "Reference Service: The New Dimension in Librarianship," College and Research Libraries 22 (January 1961):11-18.

Rubenstein, Moshe F. Patterns of Problem Solving. Englewood Cliffs, N.J.: Prentice-Hall, 1975.

Sandock, Mollie. "Student Awareness and Use of Reference Services in a Large University Library." Unpublished A.M. Thesis, University of Chicago, 1976.

Stych, F.S. "Decision Factors in Search Strategy," RQ 12 (1972):143-47.

Tauber, Maurice F. and Stephens, Irlene Roemer. Library Surveys. New York: Columbia University Press, 1967.

Torr, D.V., Fried, C. and Pervel, J.J. Program of Studies on Use of Published Indexes. Bethesda, Md.: General Electric Company, Information Systems Operations, February 1966.

Webb, Eugene J., et al. Unobtrusive Measures. Chicago: Rand McNally & Company, 1971.